

Serial No.: 10/042,878
Filing Date: January 9, 2002

Complete set of claims

1(canceled).

2(currently amended). ~~The~~ A composition comprising a photoacid generator and a fluorinated polymer according to claim 1, where the fluorinated polymer comprising the unit of structure 1 is a reaction product of polymer containing an aliphatic monocyclic fluoroalcohol unit with a at least one compound capable of functionalizing the fluoroalcohol unit with an alkyloxycarbonylalkyl group of structure $-(CR_3R_4)_p(CO)OR_5$, where R_3 and R_4 are independently H, F, (C_1-C_8) alkyl, (C_1-C_8) fluoroalkyl, cycloalkyl, cyclofluoroalkyl, $(CR_3R_4)_p(CO)OR_5$, R_3 and R_4 may combine to form an alkylspirocyclic or a fluoroalkylspirocyclic group, R_5 is H or an acid labile group, and $p=1-4$.

3(canceled).

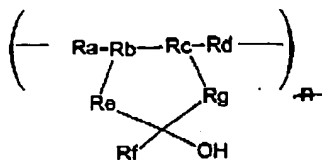
4(canceled).

5(canceled).

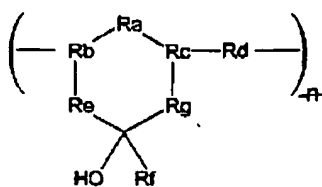
6(canceled).

7(currently amended). The composition according to claim 24, where the polymer containing an aliphatic monocyclic fluoroalcohol unit comprises at least one unit comprising the unit of structure 1 is a reaction product of polymer containing an aliphatic monocyclic fluoroalcohol unit with a compound capable of functionalizing the fluoroalcohol unit with an alkyloxycarbonylalkyl group, and further where the monocyclic fluoroalcohol polymer is selected from ,

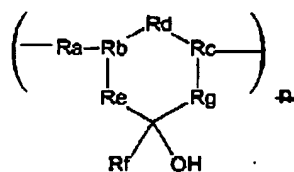
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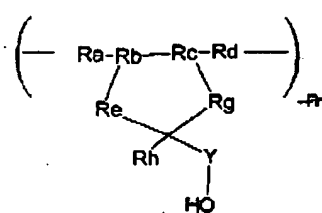
I



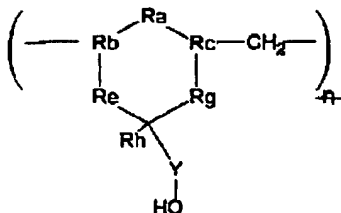
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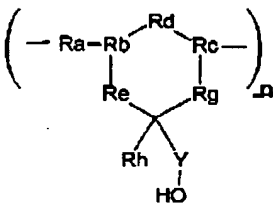
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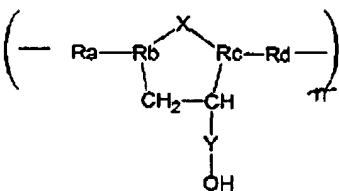
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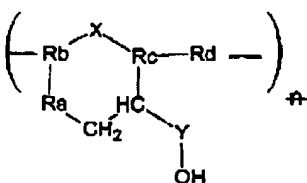
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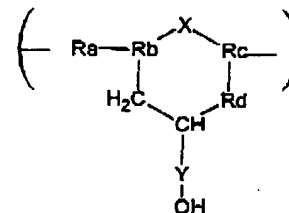
VI



VII



VIII



VIII

where Rf is a fluoroalkyl group (C₁-C₈),

Ra, Rb, Rc, Re, Rg and Rh are independently alkyl, fluoroalkyl, fluorocycloalkyl, cycloalkyl, and Ra-Re and Rg can independently be substituted with alkyl, fluoroalkyl, fluorocycloalkyl, cycloalkyl, or with a spirofluoroalkyl or spiroalkyl substituent,

Y is independently alkyl or fluoroalkyl spacer group (C₁-C₈),

X is independently CF₂ and or O

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8(original). The composition of claim 2, where the alkyloxycarbonylalkyl group is selected from t-butyloxycarbonylmethyl, methyl-adamantylloxycarbonylmethyl, t-amylloxycarbonylmethyl, methyl-norbornylloxycarbonylmethyl, t-butyloxycarbonylpropyl and t-butyloxycarbonyldifluorobutyl.

9(currently amended). The composition of claim 2 4, where the acid labile group is selected from secondary and tertiary alkyls, acetals and ketals, trimethylsilyl, β -trimethylsilyl substituted alkyls, tetrahydrofuranyl, tetrahydropyranyl, substituted or unsubstituted methoxymethoxycarbonyl, and β -trialkylsilylalkyl.

10(currently amended). The composition of claim 2 4, where the fluoroalcohol unit is further functionalized with a compound ~~comprises further units~~ containing nonacid labile groups and/or acid labile groups.

11(currently amended). The composition of claim 2 4, where the polymer containing an aliphatic monocyclic fluoroalcohol unit is selected from ~~poly(bicyclo[2.2.1]hept-5-en-2-yl)-1,1,1-trifluoro-2-(trifluoromethyl)propan-2-ol),~~ poly(1,1,2,3,3-pentafluoro-4-trifluoromethyl-4-hydroxy-1,6-heptadiene and poly(1,1,2,3,3-pentafluoro-4-trifluoroalkyl-4-hydroxy-1,6-heptadiene).

12(currently amended). The composition of claim 2 4, where the composition further comprises a polymer with ~~polymer comprises a mixture of polymers comprising monocyclic units and polymers comprising multicyclic units in the~~ polymer backbone.

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13(currently amended) The composition of claim 12, where the polymer mixture is ~~poly(bicyclo[2.2.1]hept-5-en-2-yl)-1,1,1-trifluoro-2-(trifluoromethyl)propan-2-ol)~~ with the multicyclic unit is poly(1,1,2,3,3-pentafluoro-4-trifluoromethyl-4-hydroxy-1,6-heptadiene) protected with an alkylloxycarbonylalkyl group.

14(currently amended). The composition of claim 2 4, where the composition further comprises a dissolution inhibitor.

15(currently amended): The composition of claim 2 4, where the composition further comprises a base or a photobase.

16(currently amended). The composition of claim 2 4, further comprising secondary polymers.

17(currently amended). The composition of claim 2 4, where the photoacid generator is selected from diazonium salts, iodonium salts, sulfonium salts, triazines, oxazoles, oxadiazoles, thiazoles, substituted 2-pyrones, phenolic sulfonic esters and mixtures thereof.